

CLAIMS:

1. (Amended) A driving apparatus for driving a driven device (8), characterized by comprising:

5 a motor (5) including a rotating shaft (13);

an output unit (6; 80) coupled to the motor, wherein the output unit includes a decelerating mechanism (42, 43, 56; 56, 92) for transmitting rotation of the rotating shaft, after decelerating, to the driven device and a unit housing (41; 91) for accommodating the decelerating mechanism;

10 a clutch (21; 81; 200; 300) located between the rotating shaft and the decelerating mechanism, wherein the clutch allows transmission of rotation from the rotating shaft to the decelerating mechanism and blocks transmission of rotation from the decelerating mechanism to the rotating shaft, and wherein the clutch has a clutch housing (22; 82; 201; 301) fixed to the unit housing; and

15 engaging means (22d, 57a; 111, 112; 116, 117) located between the unit housing (41) and the clutch housing (22) for blocking rotation of the clutch housing (22) relative to the unit housing (41).

2. (Amended) A driving apparatus for driving a driven device (8), characterized by comprising:

25 a motor (5), which includes a motor housing (11, 16) and a rotating shaft (13) rotatably supported by the motor housing;

an output unit (6; 80) coupled to the motor, wherein the output unit includes a decelerating mechanism (42, 43, 56; 56, 92) for transmitting rotation of the rotating shaft, after decelerating, to the driven device;

30 a clutch (71) located between the rotating shaft and the decelerating mechanism, wherein the clutch allows

transmission of rotation from the rotating shaft to the decelerating mechanism and blocks transmission of rotation from the decelerating mechanism to the rotating shaft, and wherein the clutch has a clutch housing (72) fixed to the unit housing; and

engaging means (121, 122) located between the motor housing (11, 16) and the clutch housing (72) for blocking rotation of the clutch housing relative to the motor housing.

3. (Amended) A driving apparatus for driving a driven device (8), characterized by comprising:

a motor (5) including a rotating shaft (13);

an output unit (6; 80) coupled to the motor, wherein the output unit includes a decelerating mechanism (42, 43, 56; 56, 92) for transmitting rotation of the rotating shaft, after decelerating, to the driven device, and wherein the decelerating mechanism is a worm gear mechanism including a worm shaft (56) separated from the rotating shaft and a worm wheel (43; 92) meshed with the worm shaft; and

a clutch (21; 71; 81; 200; 300) located between the rotating shaft and the worm shaft, wherein the clutch allows transmission of rotation from the rotating shaft to the worm shaft and blocks transmission of rotation from the worm shaft to the rotating shaft.

4. (Amended) The driving apparatus according to any one of claims 1 to 3, characterized in that the clutch (21; 71; 81; 200; 300) functions to block a movement of the decelerating mechanism (42, 43, 56; 56, 92) based on force applied to the driven device (8).

5. (Amended) The driving apparatus according to claim 1, characterized in that a bearing (231) for supporting the

rotating shaft (13) is attached to the clutch housing (201).

6. (Amended) The driving apparatus according to claim 1, characterized in that the decelerating mechanism is a worm gear mechanism including a worm shaft (56) coupled to the clutch (200) and a worm wheel (43; 92) meshed with the worm shaft (56), wherein a bearing (56b) for supporting the worm shaft (56) is attached to the clutch housing (201).

7. (Amended) The driving apparatus according to claim 1 or 2, characterized in that the decelerating mechanism is a worm gear mechanism including a worm shaft (56) coupled to the clutch (21; 71; 81; 200; 300) and a worm wheel (43; 92) meshed with the worm shaft.

8. (Amended) The driving apparatus according to claim 7, characterized in that the clutch comprises:

a driving rotor (23; 202; 302) coupled to the rotating shaft (13) for rotation integral therewith;

a driven rotor (25; 204; 303) coupled to the worm shaft (56) for rotation integral therewith, the driven rotor operatively coupled to the driving rotor; and

a lock member (26; 205; 304) for selectively allowing and blocking the rotation of the driven rotor.

9. (Amended) The driving apparatus according to claim 3, characterized in that the clutch comprises:

a driving rotor (23; 202; 302) coupled to the rotating shaft (13) for rotation integral therewith;

a driven rotor (25; 204; 303) coupled to the worm shaft (56) for rotation integral therewith, the driven rotor operatively coupled to the driving rotor; and

a lock member (26; 205; 304) for selectively allowing

and blocking the rotation of the driven rotor.

10. (Amended) The driving apparatus according to claim 8 or 9, characterized in that the driven rotor (25) is formed integrally with the worm shaft (56).

11. (Amended) The driving apparatus according to claim 9, characterized in that the output unit (6; 80) comprises a unit housing (41; 91) for accommodating the worm gear mechanism, and the clutch (21; 81; 200; 300) comprises a clutch housing (22; 82; 201; 301) for accommodating the driving rotor (23; 202; 302), the driven rotor (25; 204; 303) and the lock member (26; 205; 304), wherein the clutch housing is fixed to the unit housing.

12. (Amended) The driving apparatus according to claim 11, characterized in that the unit housing (41; 91) has a support (57; 106) for rotatably supporting one end of the worm shaft (56), and the clutch housing (22; 82; 201; 301) is fixed to the support.

13. (Amended) The driving apparatus according to claim 9, characterized in that the clutch (200; 300) comprises a clutch housing (201; 301) for unremovably accommodating the driving rotor (202; 302), the driven rotor (204; 303) and the lock member (205; 304), wherein the clutch is assembled as a single unit.

14. (Amended) The driving apparatus according to claim 9, characterized in that the clutch (21; 71; 81; 200; 300) comprises a clutch housing (22; 72; 82; 201; 301) for accommodating the driving rotor (23; 202; 302), the driven rotor (25; 204; 303) and the lock member (26; 205; 304),

wherein the lock member allows the driving rotor to rotate the driven rotor relative to the clutch housing when the driving rotor is rotated by the rotating shaft (13), and wherein the lock member is held between the driven rotor and the clutch housing to block the rotation of the driven rotor relative to the clutch housing when the driven rotor is rotated by the worm shaft (56).

15. (Amended) The driving apparatus according to claim 14, characterized in that the lock member comprises a plurality of rolling bodies (205) for circulating about an axial center of the driving rotor to the accompaniment of rotation of the driving rotor (202), and the clutch (200) comprises a support member (206) for supporting the rolling bodies to hold a relative positional relationship of the rolling bodies.

16. (Amended) The driving apparatus according to claim 15, characterized in that a bearing (231) for supporting the rotating shaft (13) is arranged integral with the support member (206).

17. (Amended) The driving apparatus according to claim 15, characterized in that the bearing (56b) for supporting the worm shaft (56) is arranged integral with the support member (206).

18. (Amended) The driving apparatus according to any one of claims 8 through 17, characterized in that the driven rotor (25; 204) contacts an end face of the rotating shaft (13) through the ball (24; 203) in the axial direction of the driven rotor, and the driven rotor (25; 204) can directly contact the driving rotor (23; 202) in the rotating direction of the driven rotor.

19. (Amended) The driving apparatus according to any one of claims 1 through 17, characterized in that a ball (24; 203) is located between an end face of the rotating shaft (13) and the clutch (21; 71; 81; 200).

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20. The driving apparatus according to any one of claims 1 through 19, characterized in that the driven device is a lifting mechanism (8) for moving up and down a windowpane. (9).

Add A17

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